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**Bulletin**

Specifications for New Model Patent		
One. Name of new model	Chinese	Improved shock absorbing and buffering structure for jogging machine <b>507582</b>
	English	
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Four. Chinese abstract of invention (Name of invention: Improved shock absorbing and buffering structure for jogging machine)

The present invention is related to an improved shock absorbing and buffering structure for a jogging machine, wherein it comprises a base frame and a belt frame, with a handrail frame installed on said base frame, and handrails attached to said handrail frame, and two parallel roller wheels pivotally attached to the belt frame. The two roller wheels are wrapped in a jogging belt loop; it is characterized by the tail end of said base frame having attached to it a pivotal connection section and at the front end having attached a linking section, and attached to the tail end of the belt frame there is a matching pivot section relative to the pivot connection section of the base frame, and attached to the front end there is a matching link section relative to the link section. Said belt frame tail end and base frame tail end are pivotally connected by means of the corresponding pivot section and the pivot connection section sleeve axle, and between the base frame's link section and the belt frame's link section is established a shock absorbing apparatus, to make belt frame oscillation relative to the base frame turning point and through the shock absorbing apparatus produce optimal shock absorption, enabling maintenance of the base frame's original rigidity and stability, to improve running comfort and stability for the person who is exercising, to reduce running impact noise levels and vibration levels, to improve fatigue intensity and usage life of the running machine, and to promote usage convenience.

English abstract of invention (Name of invention: )

This case has been forwarded to

National (local) patent application	Application date	Case number	Opinion priority
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None

#### Five. Invention specifications (1)

The present invention is related to an improved shock absorbing and buffering structure for a jogging machine, preferably indicating a base frame and a belt frame mutually pivotally connected at one end, and a base frame and a belt frame at the other end of which is installed a shock absorption device, to enable the formation of the optimal shock absorbing structure, to maintain the base frame in its original rigidity and stability, improve the running comfort and stability of the person exercising, reduce running impact noise levels and vibration levels and improve the fatigue intensity and usage life of the running machine, and promote usage convenience.

The conventional-use running machine is relatively common exercise equipment, and in order to make the running machine possess better shock absorption and improve comfort for the user, at present many conventional-use running machines are designed with a shock absorbing structure to allow the user to be able to generate a shock absorbing function during the jogging process, to reduce the counter-effects of applied force and injury to the human body, and to allow the runner more convenience and comfort; below are specifications for several examples of conventionally known shock absorbing structures in running machines.

Conventional use one is a shock absorbing structure in a running machine according to Taiwan Patent Number 226095, wherein the structure is according to Figure 7, it is at the base frame (50) that two roller wheels (51) are installed and wrapped by the running belt loop (52), and within the base frame (50) is established a two-sided extension spring (53), using said spring (53) to connect the tread of the supporting running belt (52) on two sides, while the user is running on the upper side of the tread (54) of the running belt (52), the stepping force on the running tread (54) puts additional force on the shock absorption of the two-sided spring (53) of the running tread (54) and achieves shock absorption results; however, because the design of said conventional-use structure is not favorable, during implementation the following disadvantages may be produced:

1. Its running tread is suspended in midair and can only rely on the two-sided spring for connection support, the entire structural design is relatively unstable and the user is unable to run on top of it in a stable manner, which creates a sense of instability and discomfort for the user.

#### Five. Invention specifications (2)

2. It completely relies on the two-sided spring for connection support, when said spring is functioning, it is just like a typical bedspring—after repeated expansion and contraction of the spring it may produce louder noise.

3. When using a spring extended at the two sides of the running tread, during extension of the spring it is easily damaged, and the connection site sustains great strain and is also very easily damaged, therefore its usage life is short.

4. The base frame is directly connected to the running tread by means of a spring, causing the running tread to be suspended in midair, and the base frame only relies on the support of the front and back ends at the ground, the mid-section sustains tread force at the site where the frame is in the air. The user's applied force at the mid-section when running may effectively act on the entire base frame, creating great instability and reducing the structure's original rigidity and stability.

The second type of conventional-use shock absorbing structure for a running machine is according to Taiwan Patent Number 320062. Its structure is as indicated in Figure 8; it is a shock absorbing structure installed directly on the supporting foot rod (61) of the machine (60); namely, the foot rod (61) is inserted at the foot seat (62), and a spring (63) installed between the foot seat (62) and the foot rod (61); however, this conventional-use structure may also cause the following disadvantages during its implementation:

1. Wherein, a shock absorbing structure is directly installed by means of the foot rod supporting the entire machine, other than the foot seat being immobile, the entire machine (including the handrail frame and the belt frame) may, as the result of shock absorbing and oscillating, cause the entire machine to be unstable.

2. Wherein, overall machine function at the shock absorbing structure forms a greater load on said shock absorbing structure and lowers its usage life.

3. According to the description above, the entire machine's shock absorbing oscillation in the conventional-use product creates a phenomenon of instability, influencing running stability and smoothness, and creating a sensation of discomfort while running.

Five. Invention specifications (3)

4. According to the previous specifications, because the shock absorbing of the entire machine in the conventionally used product forms a large amount of vibration, it reduces the original rigidity and stability of the structure.

The shock absorbing structure of the third type of conventionally used product is according to Taiwan Patent Claim 337170; its structure is indicated in Figure 9. For the most part it is identical to the structure in the second type of conventionally used structure, the shock absorbing structure (72) is also directly attached at the supporting foot rod (71) machine (70). The difference between the second type of shock absorbing structure and the third type of shock absorbing structure is merely that the shock absorbing construction piece is different, and the handrail frame attachment location is in a different place; however, said type of conventionally used structure still may produce the same disadvantages as the second conventional use:

1. Wherein, the shock absorbing structure is attached directly onto the foot rod support of the overall machine, and the foot seat moreover produces relative oscillation on the entire machine, therefore the entire machine is more unstable.

2. Wherein, the entire machine's functioning at the shock absorbing structure forms a relatively large load on said shock absorbing structure, the shock absorbing construction may produce a narrow angle phenomenon because of relative sliding, therefore its usage life is short.

3. According to the above specifications, with the entire machine in said conventionally used product (even connected to the foot seat), oscillating shock absorbing forms great instability, influencing running stability and smoothness and creating a sense of discomfort when running.

4. According to the specifications above, because the shock absorbing of the entire machine of said conventionally used product forms a large amount of vibration, it reduces the structure's original rigidity and stability.

Therefore, a review of the various traditional running machine shock absorbing structural designs described above reveals disadvantages. Stability produced is not optimal, original stability is reduced, use is uncomfortable, durability is less than optimal and there are other disadvantages; the present inventors worked hard and through concerted research and development efforts finally developed an accurate tool possessing practical results in the present invention.

The main objective of the present invention is to provide a special shock absorbing construction

#### Five. Invention specifications (4)

design, belt frame and base frame subunit, and to form a pivotal turning and shock absorbing structure. The base frame achieves a stable position on the ground, only the belt frame is most effective at shock absorption, to maintain the structure's original rigidity and stability, allowing the user to jog in a stable manner and to be further able to acquire effective shock absorption for the running machine's shock absorbing structure; wherein it is a special design for making the belt frame and the base frame subunit, and making the belt frame and the base frame connect at one end, and at the other end connect the shock absorbing apparatus, said shock absorbing apparatus at one end is connected with the base frame support on the ground, said belt frame is adequate for use sliding relative to the base frame and achieves the most stable shock absorption for a shock absorbing apparatus, therefore achieving the aforementioned effectiveness.

In order that the esteemed examiners thoroughly understand the technical methods of the present invention, the objective of the invention and the results achieved, illustrations of the preferred embodiments are attached and the details explained below.

Please refer to the first figure, the present invention's basic construction, it includes the base frame (10) and the belt frame (20), on said base frame (10) is installed a handrail frame (11), said handrail frame (11) is connected to the handrail (12), and at the belt frame (20) are pivotally installed two parallel roller wheels (21a) (21b), around the two roller wheels (21a) (21b) are wrapped running belt loops (22), and on the belt frame (20) is installed the running tread (200) to support the running belt (22); the present invention's main characteristics are that at said base frame (10) tail end is installed a pivotal connection section (13), and at the front end is installed a link section (14), and at the belt frame (20) tail end is installed the pivotal connection (13) base frame (10) corresponding pivot section (23), and at the front end is installed a link section (14) base frame (10) corresponding link section (24), said belt frame (20) tail end and base frame (10) tail end is pivotally connected using the corresponding pivot section (23) and the pivotal connection section (13) sleeve axle, and between the base frame (10) link section (14) and the belt frame (20) corresponding link section (24) is installed the shock absorbing apparatus (30), making the base frame (10) be presented in an unmoving state, and the belt frame (20) able to slide relative to the base frame (10) presented turning point method, and produce the optimal shock absorber through the shock absorbing apparatus (30).

#### Five. Invention specifications (5)

Wherein, during implementation of the present invention, at its link section (14) are installed numerous up and down keyholes, enabling the user to fix one end of the shock absorbing apparatus (30) at the various keyholes and enabling adjustment of the shock absorbing apparatus (30) to the various shock-absorbing intensities needed for the workout.

Wherein, during implementation of the present invention, its shock absorbing apparatus (30) may be in a spring rod style, namely, the corresponding link section (24) at the belt frame (20) has a permanently installed pivot handle (31), said pivot handle (31) has one pivot piston rod (32) inserted, and the base frame (10) link section (14) also has permanently installed the pivot handle (33), through said pivot handle (33) is inserted one piston cylinder (34), said piston rod (32) is a reciprocal set with the piston cylinder (34), and at the outer periphery of the set is installed an elastic element (35), said elastic element (35) at one end is supported at the piston rod (32) and at the other end is supported at the piston cylinder (34), enabling the piston rod (32) to move relative to the piston cylinder (34), enabling reliance on the compression of the elastic element (35) to generate a shock absorbing function for the user; wherein, the aforementioned elastic element may be a spring; wherein, the elastic element also may be high-strength rubber.

Wherein, during implementation of the present invention, its shock absorbing apparatus (30) may be an oil-pressure piston cylinder.

Please refer to Figures One, Two and Three for the composition of the present invention, in which the corresponding pivot section (23) of the belt frame (20) fits with the pivot connection section (13) of base frame (10), and the sleeve axle pivot connection is formed, and then the two pivot handles (31) and (33), respectively, are installed at the belt frame (20) corresponding link section (24) with the base frame (10) link section (14), and the piston rod (32) sleeve axle is pivotally connected on the pivot handle (31) of the belt frame (20), and the piston cylinder (34) sleeve axle is pivotally connected on the pivot handle (31) of base frame (10) link section (14). And at the piston rod (32) set is installed a spring (35), then the piston rod (32) is inserted into the piston cylinder (34), to enable said spring (35) at two ends, respectively, to support the piston rod (32) and the piston cylinder (34), this is the composition type of the present invention.



#### Five. Invention specifications (6)

Please refer to Figures One, Two and Four. During use of the present invention, the user as with the conventional use method runs on the running belt (22) and the running tread (200), and the applied force when running functions at the belt frame (20), because said belt frame (20) is pivotally connected at the tail end with the base frame (10), and the base frame is firmly supported at the ground to present an immobile state, therefore it is only the belt frame (20) relative to the base frame (10) together with the ground that forms the proper sliding and turning. Here, because the belt frame (20) is installed in connection with the front end of the base frame (10) to have a shock absorbing apparatus (30), and the link section (14) of the installed base frame (10) connected at said shock absorbing apparatus (30) bottom end is the downward extension supporting at the ground, therefore the belt frame (20) is similarly connected through installation at one end of the shock absorbing apparatus (30) in general and forms a relatively stable shock absorbing functional state, therefore on the one hand it cannot produce greater vibrations on the entire machine, and on the other hand it may make the belt frame (20) serve a stable and effective shock absorbing function.

Furthermore, please refer to Figures Five and Six. The present invention also can implement application of a power-driven running machine, according to the conventionally known power-driven running machine structure it has a passive wheel (40) firmly installed at the belt frame (20) roller wheel (21a) axle. And at the base frame (10) is installed a motor (41) and an active wheel (42). A transmission belt (43) is wrapped around the active wheel (42) and the passive wheel set (40) to form the connection drive; when said type of power-drive running machine application is implemented in the present invention and the belt frame (20) is oscillating, it may enable the distance between the passive wheel (40) and the active wheel (42) to change slightly. In this situation, it only requires that an idle wheel apparatus (44) be installed on the transmission belt (43) to make the transmission belt (43) retain effective transmission; this specification regarding the power-driven running machine application is provided for reference only.

Therefore, relying on the structural design in the description above, the present invention indeed possesses the following advantages:

1. The special design of the present invention is a base frame and a belt frame subunit that enables the belt frame to be pivotally connected to one end of the base frame, and further that at the other end of the belt frame and the base frame is installed a shock absorbing apparatus, causing the base frame to be presented in

Five. Invention specifications (7)

a stable, unmoving state, and only the belt frame effects shock absorbing, therefore it may in fact promote the stability of the entire machine.

2. The base frame handrail of the present invention is stable and immobile, only the belt frame is shock absorbing, it may reduce the applied force that the machine bears from the shock absorbing apparatus and relatively lengthen its usage life.

3. According to the preceding description, only the belt frame of the present invention has a shock absorbing function, the user may easily use the appropriate stable shock absorbing state, therefore it may promote a sense of comfort when running.

4. According to the preceding description, only the belt frame of the present invention has a shock absorbing function, the base frame and other machine structures are stable and therefore may ensure the original rigidity and stability of the structure.

5. In the shock absorbing apparatus installed between the belt frame and the base frame of the present invention, the belt frame is lightweight and easy to break down, and therefore it may improve simplicity in terms of maintenance.

6. According to the preceding description, the structure of the present invention is stable, the base frame does not move, and only the belt frame is shock absorbing, therefore it may reduce the production of noise.

Generally speaking, the construction of the present invention possesses the ability to maintain the original structure's rigidity and stability, improve running stability and comfort, improve durability, reduce noise, maintain simplicity and other results. It may effectively improve the deficiencies produced in conventional use; the specific field of the present invention is defined as the structural characteristics within the scope of the patent application, which has not been seen in the same category of product and of a practical and advanced nature, new model patent specifications are presented to improve the product. Consequently, in accordance with the law this application is presented and we respectfully ask that your office grant legal approval to this patent, in order to protect the legal rights and interests of the applicants.

## Brief description of the illustrations.

### (One) Illustrations

Figure 1: Is an exploded view of the present invention.

Figure 2: Is a combination exterior view of the present invention.

Figure 3: Is a combination lateral view of the present invention.

Figure 4: Is a lateral movement view of the present invention.

Figure 5: Is a lateral view of the power-driven application of the present invention.

Figure 6: Is a movement view of the power-driven application of the present invention.

Figure 7: Is a view of conventional use number one.

Figure 8: Is a view of conventional use number two.

Figure 9: Is a view of conventional use number three.

### (Two) Numbered parts in the illustrations

(10) (50) Base frame

(12) Handrails

(14) Link section

(200) (54) Running tread

(22) (52) Running belt

(24) Corresponding link section

(31) (33) Pivot handle

(34) Piston cylinder

(40) Passive wheel

(42) Active wheel

(44) Idle wheel assembly

(60) (70) Machine

(62) Foot seat

(11) Handrail frame

(13) Pivotal connection section

(20) Belt frame

(21a) (21b) (51) Roller wheel

(23) Corresponding pivot section

(30) Shock absorbing apparatus

(32) Piston rod

(35) Elastic element

(41) Motor

(43) Transmission belt

(53) (63) Spring

(61) (71) Foot rod

(72) Shock absorbing structure

## Six. Claims of the patent application

1. An improved shock absorbing and buffering structure for a jogging machine, which includes a base frame and a belt frame, installed on said base frame is a handrail frame, handrails are installed on said handrail frame, and installed on the belt frame are two parallel roller wheels, wrapped around the two roller wheels is a loop of running belt; characterized by:

Said pivotal connection section is installed at the tail end of the base frame, and a linking section is installed at the front end. At the tail end of the belt frame is installed a corresponding pivot section that has a base frame pivotal connection section, and at the front end is installed a base frame link section related to the corresponding link section. Said belt frame's corresponding pivot section and the base frame's pivotal connection section form a sleeve axle reciprocal pivot connection, and between the link section of the base frame and the corresponding link section of the belt frame a shock absorbing apparatus is installed, enabling the belt frame to oscillate relative to the base frame presented to the turning point, and through the shock absorbing apparatus produce a more optimal shock absorber.

2. An improved shock absorbing and buffering structure for a jogging machine according to Patent Claim 1; the shock absorbing structure is a pivot handle permanently installed at the belt frame corresponding link section, said pivot handle threads through a piston rod of the pivot, and the pivot handle is also permanently installed at the link section of the base frame. Said pivot handle is threaded through a piston cylinder of the pivot, said piston rod and piston cylinder are a reciprocally connected set, and at the outer sleeve is installed an elastic element, one end of said elastic element is supported at the piston rod and the other end is supported by the piston cylinder, enabling the piston rod when it moves relative to the piston cylinder to be able to rely on the compression of the elastic element to produce the shock absorbing function.

3. An improved shock absorbing and buffering structure for a jogging machine according to Patent Claim 2; wherein the elastic element is a spring.

4. An improved shock absorbing and buffering structure for a jogging machine according to Patent Claim 2; wherein the elastic element is high-strength rubber.

5. An improved shock absorbing and buffering structure for a jogging machine according to Patent Claim 1; wherein the shock absorbing apparatus may be an oil-pressure piston cylinder.

# (lǎng'wǐj) matters

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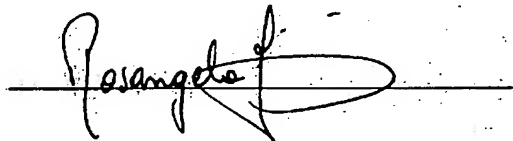
## CERTIFICATE OF ACCURACY

STATE OF COLORADO ) SS: 84-1205131  
COUNTY OF BOULDER )

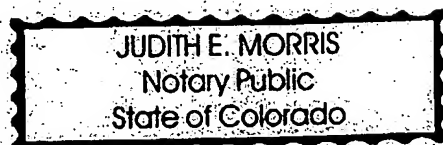
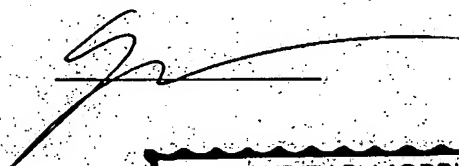
ROSANGELA FIORI being duly sworn, deposes and says that she is the Manager of LANGUAGE MATTERS, 1445 Pearl Street, Boulder, CO 80302 and that she is thoroughly familiar with KERILYN SAPPINGTON, who translated the attached document titled:

## PUBLICATION NO. 507582

from the TRADITIONAL CHINESE language into the ENGLISH language, and that the ENGLISH text is a true and correct translation of the copy to the best of her knowledge and belief.



Sworn before me this  
April 27, 2005



My Commission Expires 08/02/2008

Figure 1.

Figure 2.

Figure 3.

Figure 4.

Figure 5.

Figure 6.

Figure 7.

Figure 8.

Figure 9.

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類別： A63B <sup>22</sup> /02	

(以上各欄由本局填註)

公告本

# 新型專利說明書

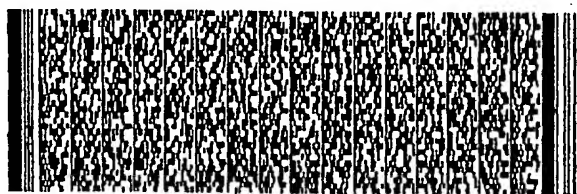
一、 新型名稱	中文	跑步機之避震緩衝結構改良	507582
	英文		
二、 創作人	姓名 (中文)	1. 劉毓毓 2. 吳宏生 3. 陳淳和	
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#### 四、中文創作摘要 (創作之名稱：跑步機之避震緩衝結構改良)

本創作係有關於一種跑步機之避震緩衝結構改良，其係包含有基架與帶架，該基架上設有扶手架，該扶手架連設有扶手，而帶架樞設兩平行輥輪，於該兩輥輪套繞循環跑步帶；其特徵係該基架尾端設有樞接部，且前端設有連結部，而帶架尾端設有與基架之樞接部相配合之配樞部，且前端設有與基架相配合之配結部，該帶架尾端與基架尾端以配樞部與樞接部穿軸樞接，而基架之連結部與帶架之配結部之間連設緩衝裝置，使帶架可相對基架呈轉點式擺動，而由緩衝裝置產生較佳緩衝，俾維持基架原來剛性及穩定性，提高運動者跑步舒適性與安全性，減少跑步衝擊噪音值與振動值，提高跑步機之疲勞強度與使用壽命，及增進使用方便性者。

#### 英文創作摘要 (創作之名稱：)





本案已向

國(地區)申請專利

申請日期

案號

主張優先權

無

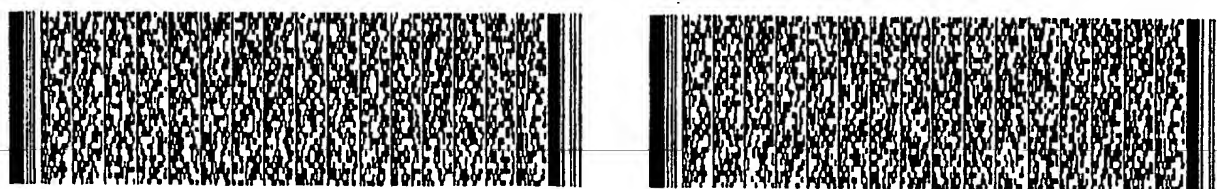
## 五、創作說明 (1)

本創作係有關於一種跑步機之避震緩衝結構改良，尤指一種基架與帶架一端相互樞接，且基架與帶架另端連設緩衝裝置，俾形成極佳的緩衝機構形態，以維持基架原來剛性及穩定性，提高運動者跑步舒適性與安全性，減少跑步衝擊噪音值與振動值，提高跑步機之疲勞強度與使用壽命，及增進使用方便性者。

按習用跑步機係為相當普遍的運動器具，而為了讓跑步機具適當緩衝性，增進使用者跑步之舒適性，目前已有許多習用跑步機，設計使機體具有緩衝結構，讓使用者在跑步的過程中能產生一緩衝作用，以減低反作用力對人體產生傷害，並讓跑步者更為輕便與舒適；以下茲舉出幾個習知跑步機緩衝結構作說明。

第一種習用跑步機緩衝結構如台灣專利公告第二二六〇九五號專利案，其結構如第七圖所示，係於基架(50)框設兩輓輪(51)以套繞循環跑步帶(52)，並於基架(50)框內圍兩對邊佈設彈簧(53)，以該等彈簧(53)用以連接支撐跑步帶(52)之跑步板(54)兩邊，當使用者在跑步板(54)上方之跑步帶(52)跑步時，其踩踏作用在跑步板(54)的力量便受到跑步板(54)兩對邊的彈簧(53)緩衝，而達到緩衝之效果；然而，該種習用結構因設計不良，於實施時會產生下列幾點缺失：

1. 其跑步板呈懸空，僅藉由兩對邊彈簧接撐，整個結構設計相當不穩固，使用者無法穩定地在其上跑步，造成跑步的不安定感與不舒適感。



五、創作說明 (2)

2. 其完全藉由兩邊彈簧接撐，該等彈簧作用時，如同一般彈簧彈跳床一樣，眾多彈簧在張縮時會產生較大的噪音。

3. 以彈簧佈拉於跑步板兩邊，彈簧拉伸一段時很容易便損壞，而且連接處所承受的應力極大，也是很容易受損，故而使用壽命不長。

4. 其基架框直接以彈簧連接跑步板，並使跑步板懸空，且基架僅靠前後端支撐於地面，中段承受踏力處呈架空，使用者在中段處跑步之作用力，會有效地作用在整個基架，而造成極大的不穩定現象，相對降低其結構原有的剛性與穩定性。

第二種習用跑步機緩衝結構如台灣專利公告第三二〇〇六二號專利案，其結構如第八圖所示，係直接在機體(60)支撐腳桿(61)上設緩衝結構，即腳桿(61)穿套於腳座(62)，並於腳座(62)與腳桿(61)之間設彈簧(63)；然而，該種習用結構在實施時也會產生下列幾點缺失：

1. 其在直接在用以支撐整個機體的腳桿設緩衝結構，除了腳座不動之外，整個機體（包含扶手架與帶架）都會因為緩衝而擺動，造成整個機體不穩定。

2. 其整個機體作用在緩衝結構，形成該緩衝結構較大的負荷，相對減低其使用壽命。

3. 如上所述，該習用品整個機體擺動緩衝，形成不穩定現象，相對影響跑步的穩定性與順暢性，造成跑步的不舒適感。



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### 五、創作說明 (3)

4. 如上所述，該習用品整個機體因為緩衝而形成較大幅度的震動，相對降低其結構原有的剛性與穩定性。

第三種習用跑步機緩衝結構如台灣專利公告第三三七一七〇號專利案，其結構如第九圖所示，大致與上述第二種習用結構相同，也是直接在機體(70)的支撐腳桿(71)上設緩衝結構(72)，第三種習用與第二種習用的差別，只是緩衝的構件不同，及扶手架設置位置的差別；然而，該種習用結構還是會產生與第二種習用相同的缺失：

1. 其在直接在用以支撐整個機體的腳桿設緩衝結構，而腳座又與整個機體產生相對擺動，故其整個機體更為不穩定。

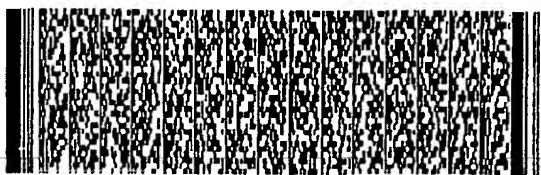
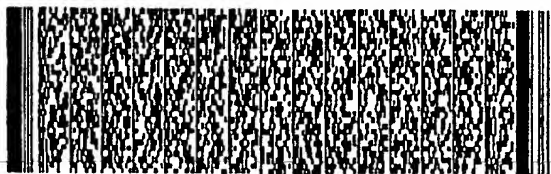
2. 其整個機體作用在緩衝結構，形成該緩衝結構較大的負荷，且緩衝構件會因相對擺轉而產生閉角現象，故其使用壽命也不長。

3. 如上所述，該習用品整個機體（甚至連同腳座）擺動緩衝，形成極不穩定現象，相對影響跑步的穩定性與順暢性，造成跑步的不舒適感。

4. 如上所述，該習用品整個機體因為緩衝而形成較大幅度的震動，相對降低其結構原有的剛性與穩定性。

緣是，有鑑於上述各種傳統跑步機緩衝結構設計不良，產生穩定性不佳，降低原有剛性，使用不舒適，及耐用性不佳等缺失；本創作人等乃積極努力研究，經潛心研發，終於發展出確具實用功效之本創作。

本創作之主要目的，在於提供一種特殊緩衝構造設

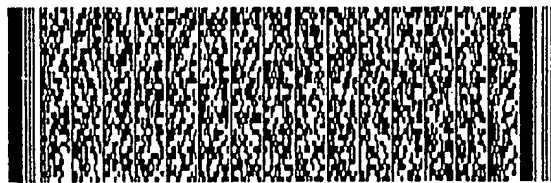
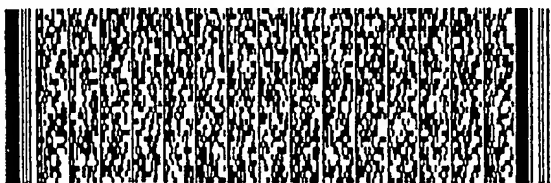


## 五、創作說明 (4)

計，帶架與基架分體，並形成相對樞轉與緩衝結構，基架得以穩固置於地面，僅帶架作最有效的緩衝，以維持結構原有剛性與穩定性，讓使用者能穩定跑步，又能獲得有效緩衝之跑步機緩衝結構；其係特別設計使帶架與基架分體，並使帶架與基架一端樞接，另端以緩衝裝置連接，該緩衝裝置一端連同基架支撐於地面，該帶架得以相對基架擺轉，並獲得緩衝裝置最穩當的緩衝，故能達到上述之功效。

為便於貴審查委員深入了解本創作之技術手段，創作目的與達成功效，茲附以較佳實施例圖詳細說明如后。

請參看第一圖所示，本創作之基本構造，係包含有基架(10)與帶架(20)，該基架(10)上設有扶手架(11)，該扶手架(11)連設有扶手(12)，而帶架(20)樞設兩平行輥輪(21a)(21b)，於該兩輥輪(21a)(21b)套繞循環跑步帶(22)，且於帶架(20)上設跑步板(200)以支撐跑步帶(22)；本創作之主要特徵，係該基架(10)尾端設有樞接部(13)，且前端設有連結部(14)，而帶架(20)尾端設有與基架(10)之樞接部(13)相配合之配樞部(23)，且前端設有與基架(10)之連結部(14)相配合之配結部(24)，該帶架(20)尾端與基架(10)尾端以配樞部(23)與樞接部(13)穿軸樞接，而基架(10)之連結部(14)與帶架(20)之配結部(24)之間連設緩衝裝置(30)，使基架(10)呈不動狀態，而帶架(20)可相對基架(10)呈轉點式擺動，而由緩衝裝置(30)產生較佳緩衝者。



### 五、創作說明 (5)

其中，本創作實施時，其連結部(14)設有數個上下分佈之鎖孔，令使用者可將緩衝裝置(30)一端固定在不同的鎖孔，使之依緩衝強度不同需要而調整緩衝裝置(30)的行程。

其中，本創作實施時，其緩衝裝置(30)可為彈簧桿式，即於帶架(20)配結部(24)固設樞耳(31)，該樞耳(31)穿樞一活塞桿(32)，而基架(10)連結部(14)亦固設樞耳(33)，該樞耳(33)穿樞一活塞筒(34)，該活塞桿(32)與活塞筒(34)相互套接，且外圍套設一彈性元件(35)，該彈性元件(35)一端抵於活塞桿(32)，另端抵於活塞筒(34)，使活塞桿(32)相對活塞筒(34)移動時，可藉由壓縮彈性元件(35)而產生緩衝作用者；其中，上述彈性元件可為彈簧；其中，彈性元件亦可為優力膠。

其中，本創作實施時，其緩衝裝置(30)可為油壓活塞缸。

請參看第一、二、三圖所示，本創作組合時，係將帶架(20)之配樞部(23)與基架(10)之樞接部(13)對合，並穿軸而形成樞接，再將兩樞耳(31)(33)分別固設於帶架(20)配結部(24)與基架(10)連結部(14)，並將活塞桿(32)穿軸樞接於帶架(20)上之樞耳(31)，而將活塞筒(34)穿軸樞接於基架(10)連結部(14)上之樞耳(33)，並於活塞桿(32)套設彈簧(35)，再將活塞桿(32)與活塞筒(34)穿合，使該彈簧(35)兩端分別抵於活塞桿(32)與活塞筒(34)，如是即為本創作之組合態樣。



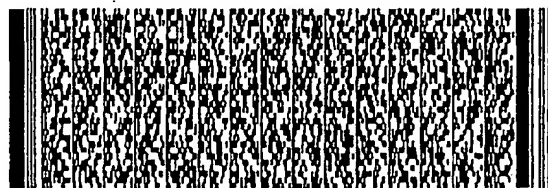
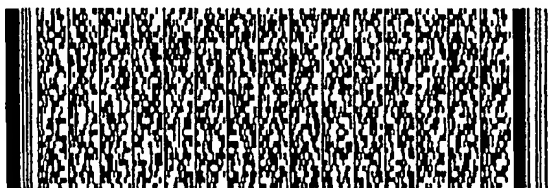
## 五、創作說明 (6)

請參看第一、二、四圖所示，本創作使用時，係使用者如習用使用方式一樣，在跑步帶(22)與跑步板(200)上跑步，而當跑步的作用力作用在帶架(20)，該帶架(20)因為尾端與基架(10)樞接，而基架(10)穩固地支撐在地面上呈不動狀態，故而只是帶架(20)相對基架(10)與地面作適當擺轉，此時，因為帶架(20)與基架(10)前端連設有緩衝裝置(30)，且該緩衝裝置(30)底端所連設的基架(10)連結部(14)是下伸支撐在地面，故而帶架(20)如同與地面連設緩衝裝置(30)一般，而形成相當穩固的緩衝作用形態，故而一方面不會造成整個機體產生較大的震動，而且另方面可使帶架(20)形成穩定而有效的緩衝作用。

再者，請參看第五、六圖所示，本創作亦可實施應用在電動跑步機，依據習知電動跑步機結構，係於帶架(20)輓輪(21a)軸固設被動輪(40)，而於基架(10)設馬達(41)與主動輪(42)，於主動輪(42)與被動輪(40)套繞傳動帶(43)而形成連動；本創作應用在該種電動跑步機時，其帶架(20)在擺動時，會使被動輪(40)與主動輪(42)間距略微改變，在此情形，只要在傳動帶(43)上設惰輪裝置(44)，即可使傳動帶(43)保持有效傳動；在此針對電動跑步機的應用提出說明，僅供參考。

因此，藉由上述之結構設計，可歸納本創作確實具有下述之優點：

1. 本創作特別設計基架與帶架分體，並使帶架與基架一端樞接，且帶架與基架另端連設緩衝裝置，令基架呈



#### 五、創作說明 (7)

穩固不動狀態，僅是帶架作有效緩衝，故可確實增進整個機體的穩定性。

2. 本創作基架扶手架等穩固不動，僅帶架緩衝，可減輕緩衝裝置承受機體的作用力，相對可增長其使用壽命。

3. 如上所述，本創作僅帶架緩衝作用，使用者可很容易適應其穩定的緩衝狀態，故可增進跑步的舒適感。

4. 如上所述，本創作僅帶架緩衝作用，基架等其他機體構件穩固，故可確保其結構原有的剛性與穩定性。

5. 本創作於帶架與基架間設緩衝裝置，帶架重量輕，容易拆解，故可增進維護上的簡便性。

6. 如上所述，本創作結構穩固，基架不動，僅帶架緩衝，故可減低噪音產生。

綜上所述，本創作之構造，具有維持原有結構剛性與穩定性，提高跑步穩定性與舒適感，增進耐用性，減低噪音，及維護簡便等功效，可有效改善習用所產生之缺失；本創作所具體界定於申請專利範圍之結構特徵，未見於同類物品，且具實用性與進步性，已符合物品改良之新型專利要件，爰依法具文提出申請，謹請 鈞局依法核予專利，以維護本申請人合法之權益。





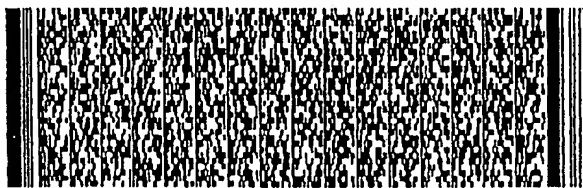
## 圖式簡單說明

## (一) 圖式部份

- 第一圖：係本創作之分解示意圖。  
 第二圖：係本創作之組合外觀示意圖。  
 第三圖：係本創作之組合側視示意圖。  
 第四圖：係本創作之側視動作示意圖。  
 第五圖：係本創作應用電動式之側視示意圖。  
 第六圖：係本創作應用電動式之動作示意圖。  
 第七圖：係第一種習用示意圖。  
 第八圖：係第二種習用示意圖。  
 第九圖：係第三種習用示意圖。

## (二) 圖號部份

- |               |                   |
|---------------|-------------------|
| (10)(50) 基架   | (11) 扶手架          |
| (12) 扶手       | (13) 樞接部          |
| (14) 連結部      | (20) 帶架           |
| (200)(54) 跑步板 | (21a)(21b)(51) 輥輪 |
| (22)(52) 跑步帶  | (23) 配樞部          |
| (24) 配結部      | (30) 緩衝裝置         |
| (31)(33) 樞耳   | (32) 活塞桿          |
| (34) 活塞筒      | (35) 彈性元件         |
| (40) 被動輪      | (41) 馬達           |
| (42) 主動輪      | (43) 傳動帶          |
| (44) 惰輪裝置     | (53)(63) 彈簧       |
| (60)(70) 機體   | (61)(71) 腳桿       |
| (62) 腳座       | (72) 緩衝結構         |



## 六、申請專利範圍

1. 一種跑步機之避震緩衝結構改良，其係包含有基架與帶架，該基架上設有扶手架，該扶手架連設有扶手，而帶架樞設兩平行輓輪，於該兩輓輪套繞循環跑步帶；其特徵在於：

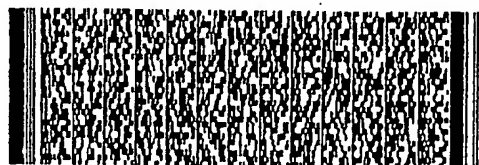
該基架尾端設有樞接部，且前端設有連結部，而帶架尾端設有與基架之樞接部相配合之配樞部，且前端設有與基架之連結部相配合之配結部，該帶架之配樞部與基架之樞接部穿軸相互樞接，且基架之連結部與帶架之配結部之間連設緩衝裝置，使帶架可相對基架呈轉點式擺動，而由緩衝裝置產生較佳緩衝者。

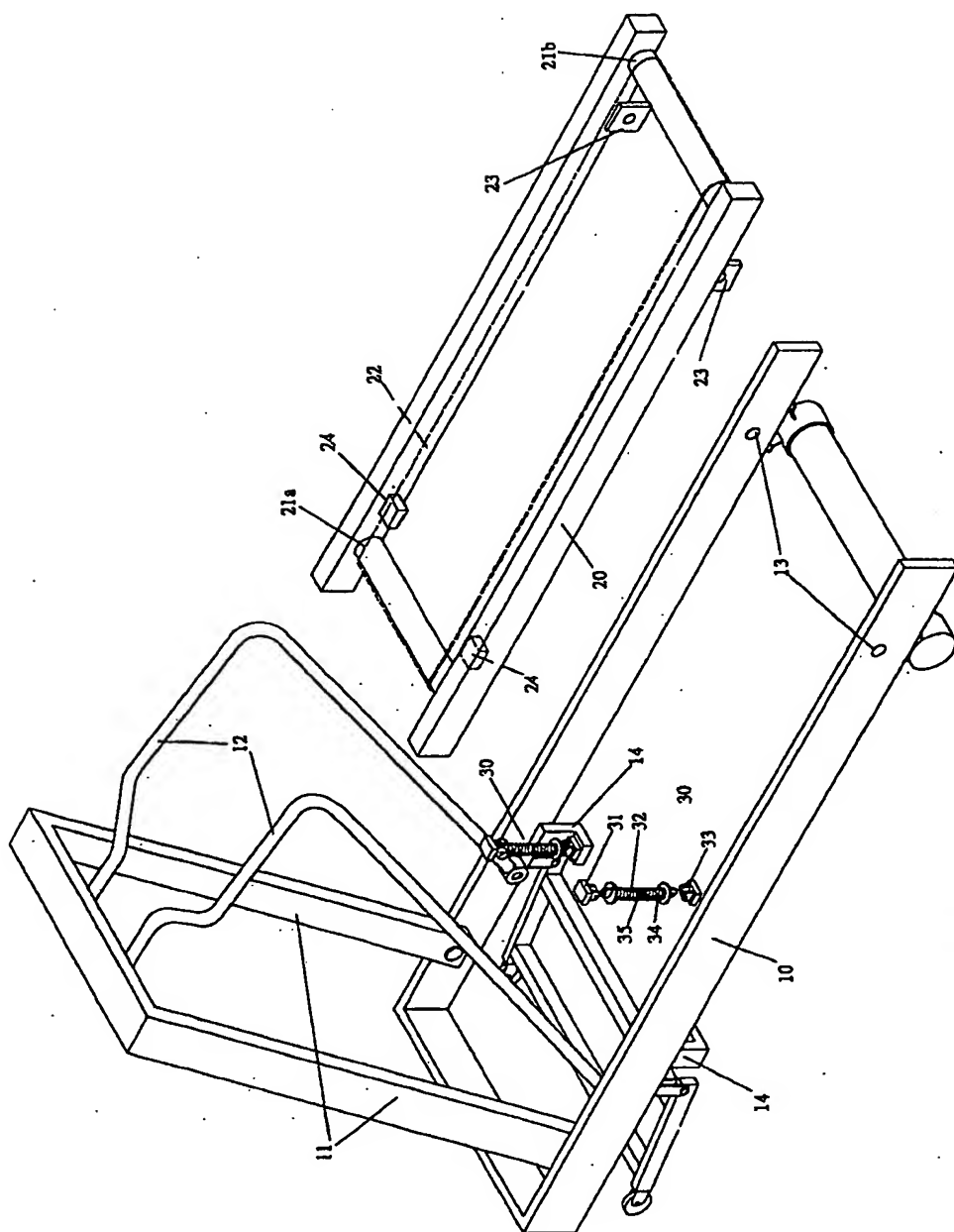
2. 如申請專利範圍第1項所述之跑步機之避震緩衝結構改良；緩衝裝置係於帶架配結部固設樞耳，該樞耳穿樞一活塞桿，而基架連結部亦固設樞耳，該樞耳穿樞一活塞筒，該活塞桿與活塞筒相互套接，且外圍套設一彈性元件，該彈性元件一端抵於活塞桿，另端抵於活塞筒，使活塞桿相對活塞筒移動時，可藉由壓縮彈性元件而產生緩衝作用者。

3. 如申請專利範圍第2項所述之跑步機之避震緩衝結構改良；其中，彈性元件為彈簧。

4. 如申請專利範圍第2項所述之跑步機之避震緩衝結構改良；其中，彈性元件為優力膠。

5. 如申請專利範圍第1項所述之跑步機之避震緩衝結構改良；其中，緩衝裝置可為油壓活塞缸。

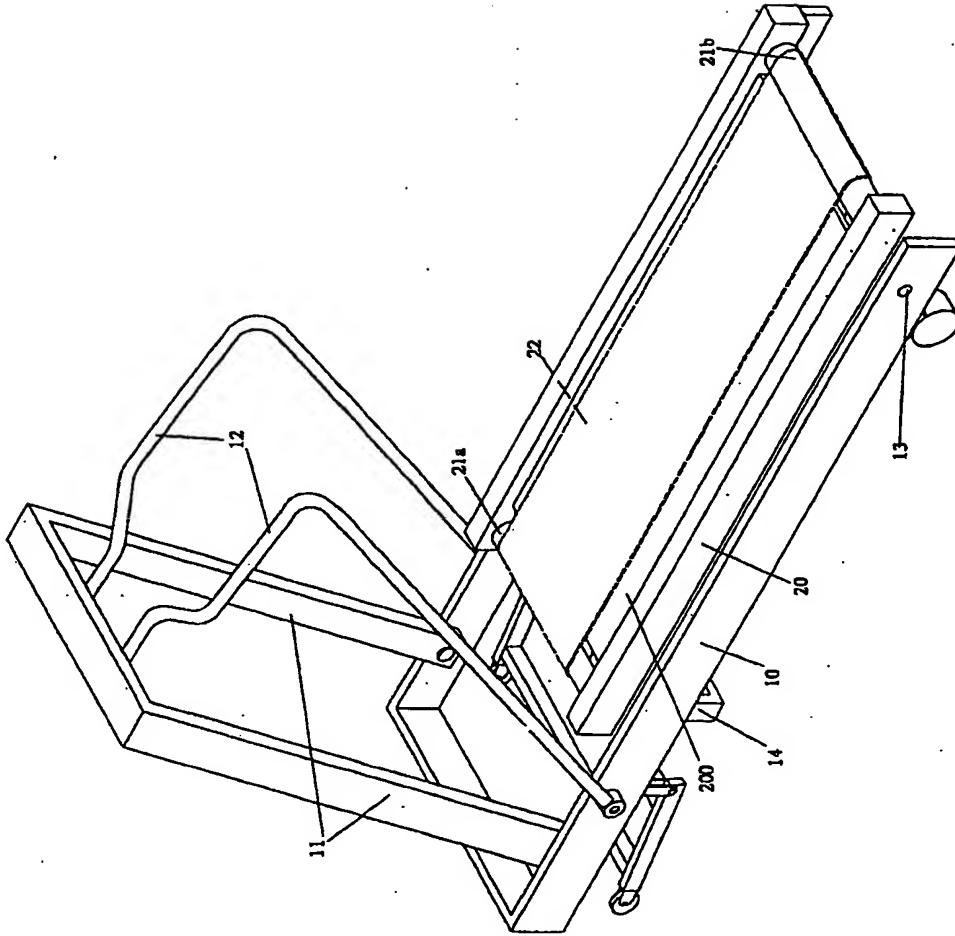




第一圖

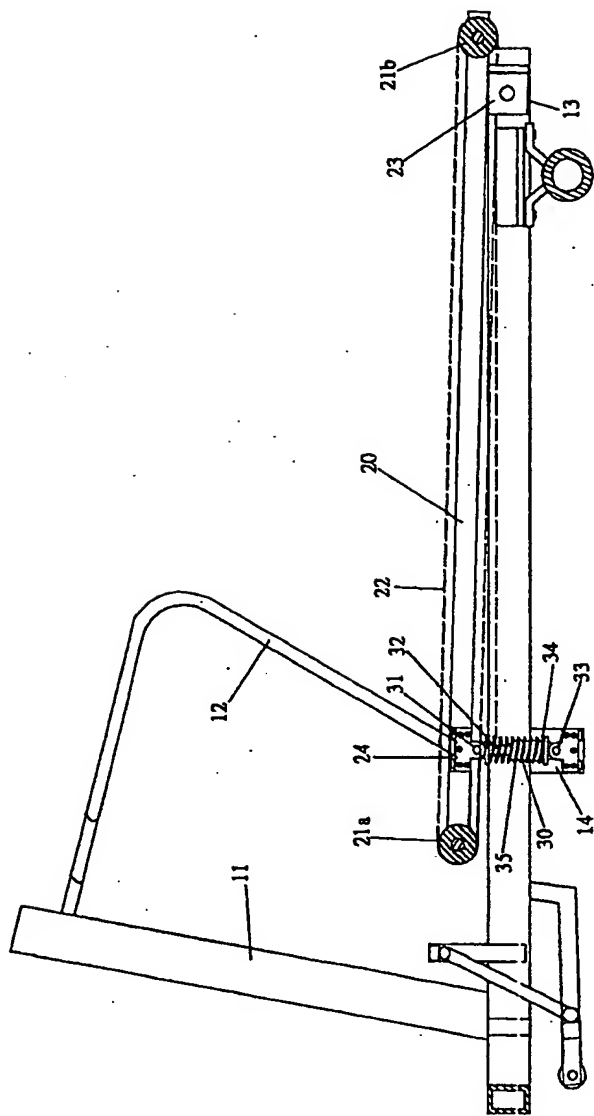
Fig. 1

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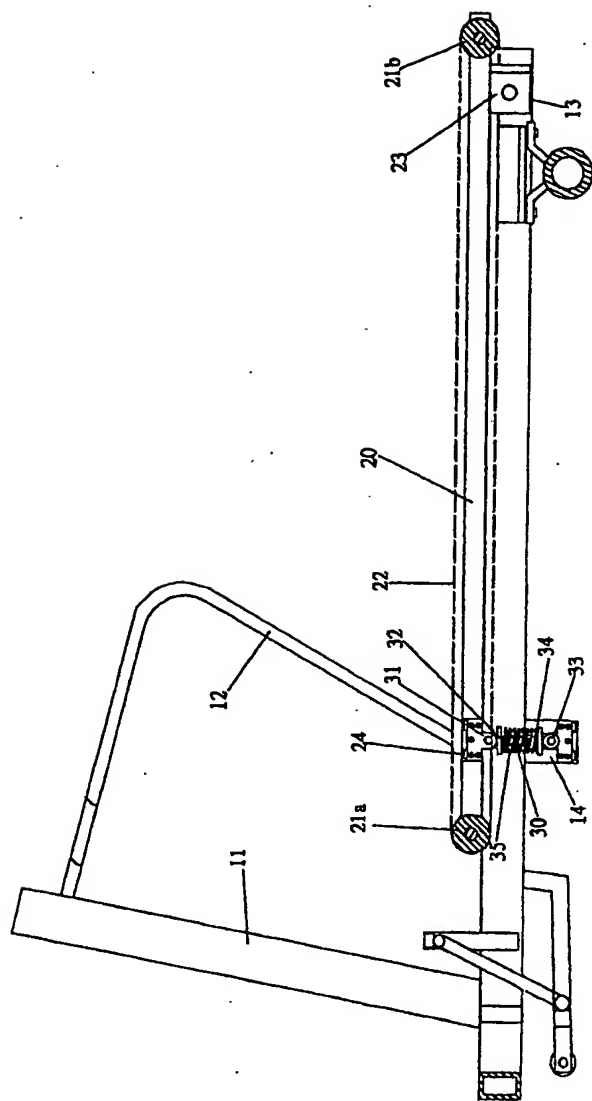
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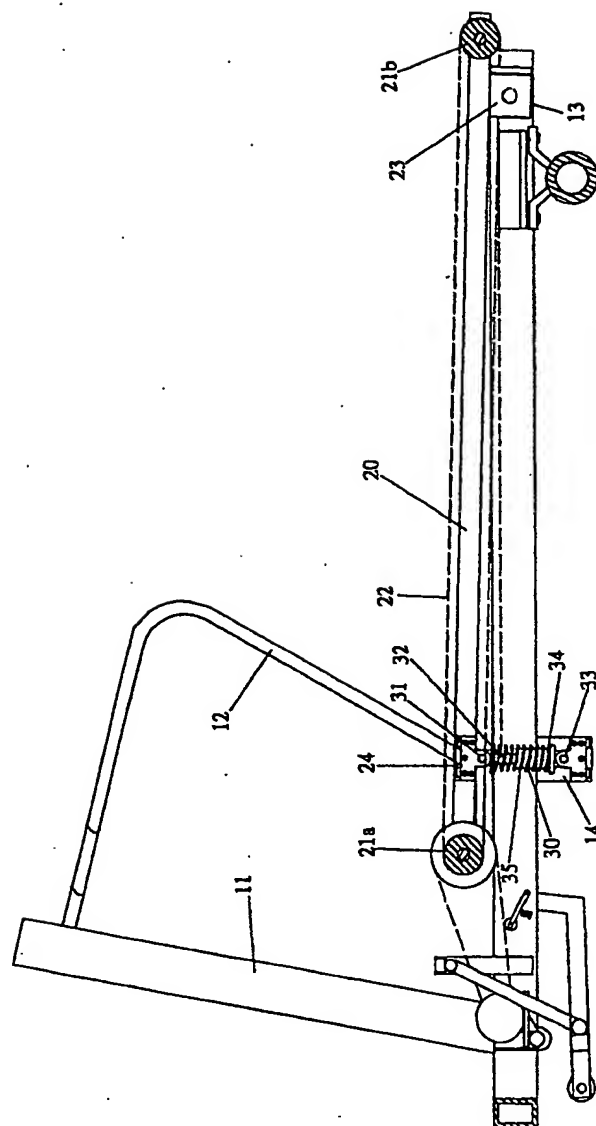
第三圖

Fig. 3



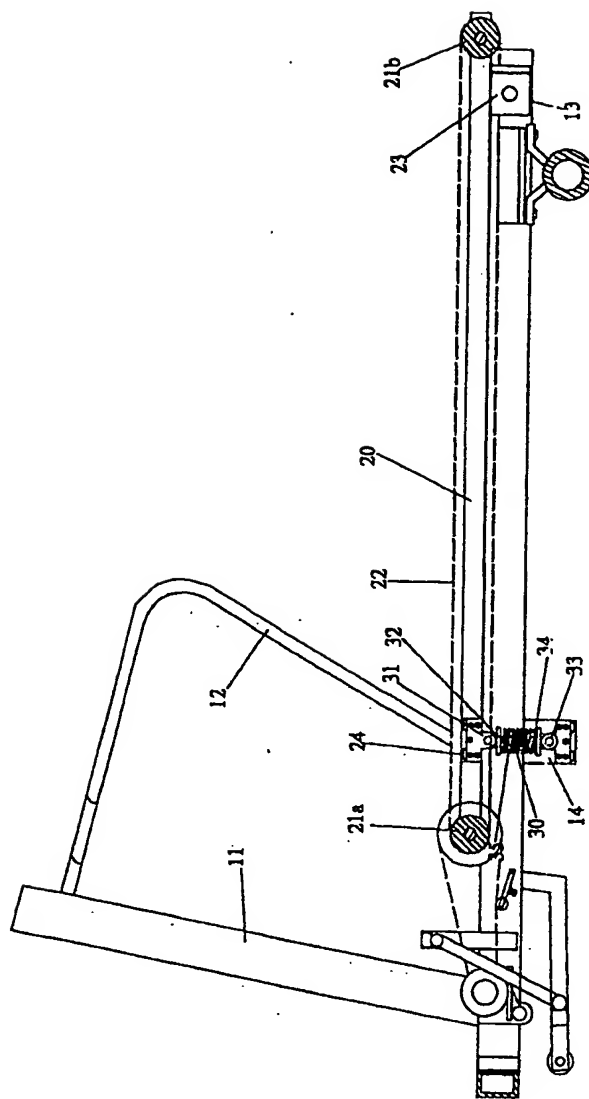
第四圖

Fig. 4



第五圖

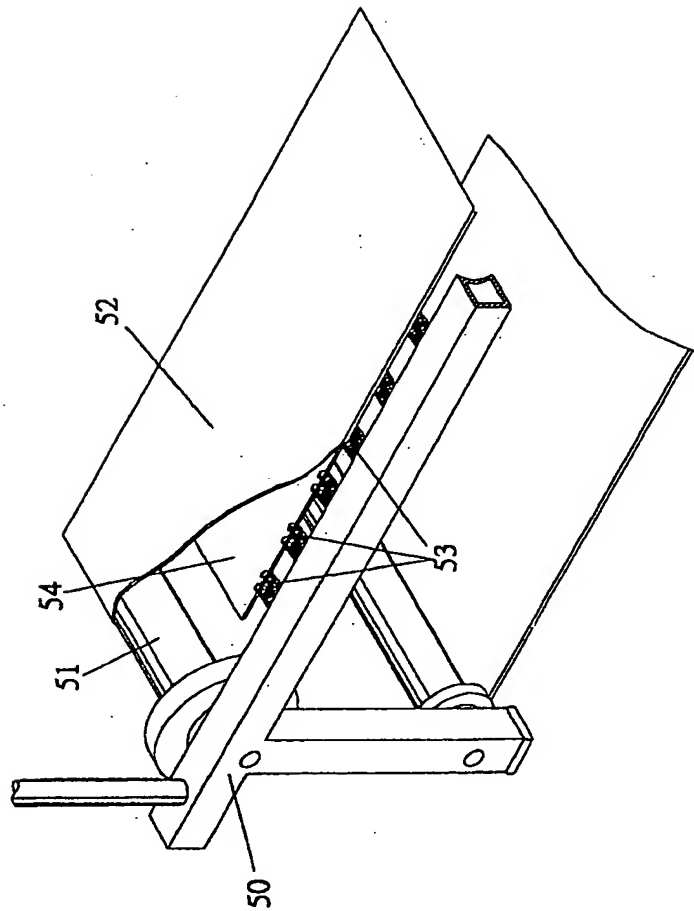
Fig. 5



第六圖

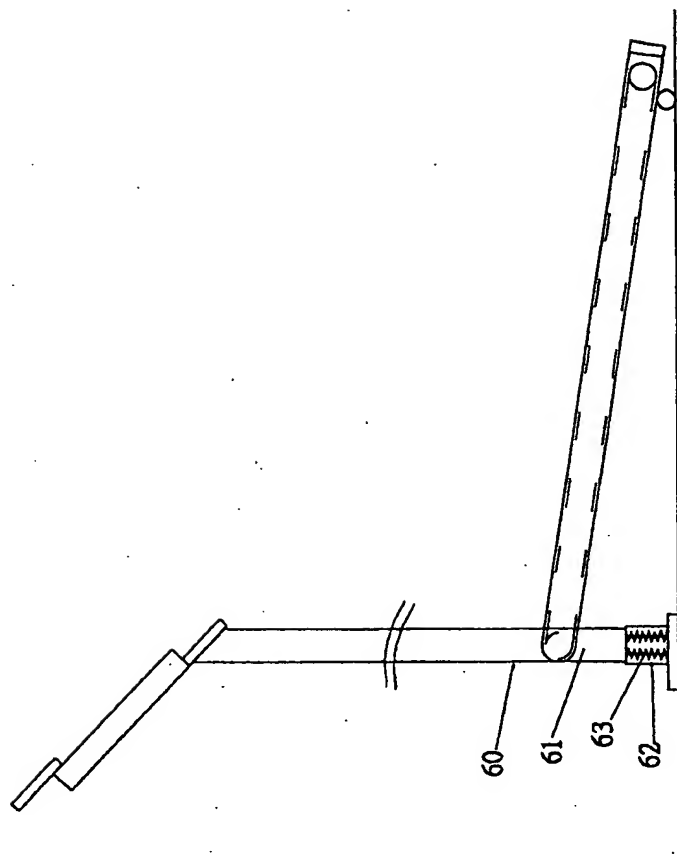
Fig. 6





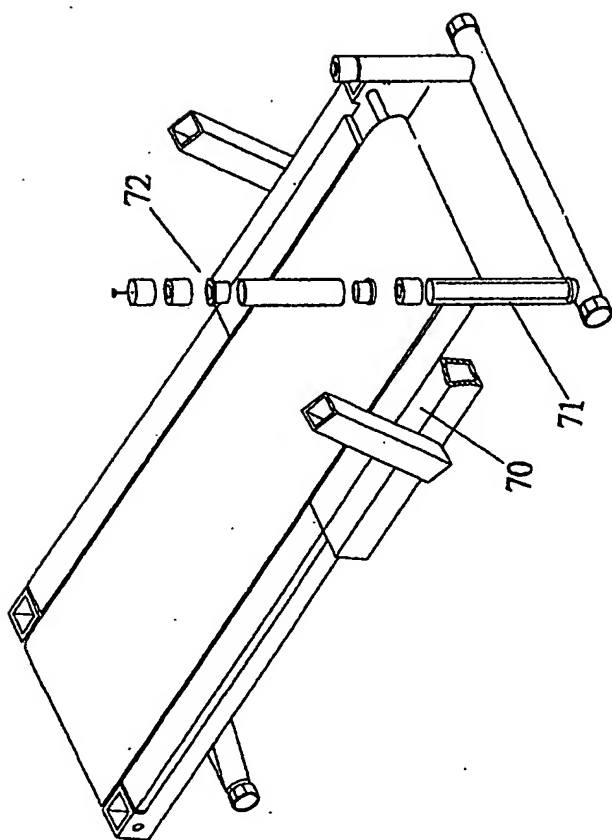
第七圖

Fig. 7



第八圖

Fig. 8



第九圖

Fig. 9

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